International Journal of System Modeling and Simulation Vol 1(1) Apr-Jun 2016

OTA based Current-Mode Sinusoidal Quadrature Oscillator Circuits

Dattaguru V. Kamath
Professor, Department of E&C Engg.,
Manipal Institute of Technology, Manipal University,
Manipal, India
dv.kamath@manipal.edu, reachdvkamath@yahoo.com

***Abstract*—This paper discusses the circuit realization, analysis and design of OTA based current-mode quadrature oscillators. The active building blocks used in the oscillator design are SO-OTA, DO-OTAand/ or MO-OTA. The proposed current-mode oscillator circuitsare derived from integrator based continuous-time filter structures. The proposed oscillator circuits provide sinusoidal output currents with 90º phase difference and other advantages include simplicity, good sensitivity and use of grounded capacitors.The workability of the proposed oscillators is verified with SPICE simulations.**

***IndexTerms*—Analog Signal Processing, Voltage-mode, Current-mode,Sinusoidal oscillator,Quadrature oscillator,Operational Transconductance Amplifier (OTA), SO-OTA, DO-OTA, MO-OTA**